

defect in the skull. The consistency of the plate was now much changed. The pieces were thinner than the original plate, the smoothness of its surface had disappeared, the pieces were soft, had lost their elasticity, and could be rubbed away between the fingers. After thorough removal of the granulation tissue with a sharp curette, the wound was completely closed by sutures. The celluloid plate was originally 2 mm. thick, and it appears that about a year before the sinus developed, the plate had been fractured. At that time the patient was struck by a foot ball in the region of the plate, after which he experienced an unpleasant sensation until without further cause the sinus appeared. Six weeks after the removal of the celluloid plate, a gold plate, 15 cm. long and 9 cm. wide, was introduced and healed in without trouble. Celluloid offered a most useful material because of its firmness, and the ease with which it could be sterilized and modelled. We should strive to find another as useful material without its disadvantages. Funke thinks it may be found in juvelit produced by Fritz Pollak, of Vienna. It is made from phenol and formaldehyde.

THERAPEUTICS

UNDER THE CHARGE OF

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The Intradural Administration of Mercurialized Serum in the Treatment of Cerebrospinal Syphilis.—BYRNES (*Jour. Amer. Med. Assoc.*, 1914, lxi, 2182) reports 32 cases of syphilis of the nervous system who have been treated by the intradural administration of mercurialized serum. Of the 32 cases, there were 13 of tabes dorsalis, 2 of taboparesis, 3 of cerebrospinal meningomyelitis, and 14 of general paresis. In general the cases of tabes and meningomyelitis have shown the most marked improvement although, in a few instances, general paresis has been distinctly benefited. The improvement in clinical symptoms has been similar to that observed in the Swift-Ellis method. In most of the cases of locomotor ataxia relief of the pains has been decided, the gait has improved, and gastric symptoms have been distinctly alleviated. The reaction following the administration of mercurialized serum is usually mild according to Byrnes. There is some pain in the legs for six or twelve hours, slight nausea, rarely vomiting, and a moderate rise of temperature. All of these symptoms generally subside within thirty-six hours. Byrnes has not observed the sphincter disturbances sometimes seen after the use of salvarsanized serum nor has there been any evidence of renal disturbance or other untoward symptoms. The technique for the preparation and administration of the serum is similar to that employed in the Swift-Ellis method, except that no drug is administered before withdrawing

the blood. Sufficient blood is withdrawn from the patient to yield from 12 to 30 c.c. of serum. After the blood has coagulated the serum is pipetted off and if necessary centrifuged for twenty minutes. If diluted serum is to be used, to 12 c.c. of the clear serum is added 1 c.c. of a solution of mercuric chlorid in freshly distilled water so made that each cubic centimeter contains one-fiftieth grain of mercuric chlorid. A sufficient amount of normal salt solution is added to the serum thus prepared to make a total volume of 30 c.c. If the concentrated serum is to be used the same quantity of mercuric chlorid is added to 30 c.c. of serum but there is no special reason for employing this concentrated preparation. Byrnes does not believe that mercurialized serum alone is the only treatment that is necessary in syphilis of the central nervous system, he is of the opinion that it is equally, if not more, efficacious than salvarsanized serum in the local treatment of these diseases. The immediate reactions following its administration are, in general, not so severe as those after the use of salvarsanized serum, and the cell count in the spinal fluid appears to be more quickly reduced. Since preliminary medication is not required, the blood may be obtained at any time; and because of the greater stability of the mercurialized serum it may be prepared at leisure and kept in sealed flasks until it is convenient to administer it. In certain cases of cerebrospinal syphilis, in which the serum Wassermann is negative but in which there are all the indication for intraspinal treatment, Byrnes thinks it unnecessary to subject the patient to the discomforts of an intravenous administration of salvarsan merely for the purpose of securing a preparation for intradural injection. This objection does not arise in the use of mercurialized serum. It is true that in many cases both the blood and spinal fluid show evidences of infection, and in such instances the intravenous dose of salvarsan cannot justly be withheld so that he has frequently given the combined salvarsanized and mercurialized serum intraspinally. Owing to the greater stability of the mercurialized serum Byrnes hopes that a method may be devised by which a permanent preparation can be dispensed in sealed ampoules and thus simplify the whole technique of intraspinal therapy. While it may be unwise to entertain the idea of using a foreign serum, it is not unlikely that human serum may be obtained in sufficient quantities for this purpose.

The Treatment of Tetanus.—HOCHHAUS, KREUTER, ROTHFUCHS, ALEXANDER, KÜHN, and MÜLLER (*München. med. Wschr.*, 1914, lxi, 2253-2260) write concerning their experiences in treating tetanus among the wounded. There is a great difference in opinion regarding the efficacy of various methods of treatment. Some report great benefit from magnesium sulphate while others have had no success at all with this method. Kreuter advocates the intravenous and intraspinal use of large doses of serum. Rothfuchs claims to have seen marked benefit from salvarsan in four cases. Alexander states that 8 of his patients, given 10 grams of chloral in a single dose each day, have all recovered while 2 died who received only 5 grams of chloral. This group of patients also received serum besides the symptomatic chloral treatment. Kühn and Müller advocate the use of luminal instead of chloral and other sedatives to control the convulsions. They speak especially of the sodium salt, which because of its solubility of water